[Billing Code 4140-01-P]

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Government-Owned Inventions; Availability for Licensing

AGENCY: National Institutes of Health, HHS.

ACTION: Notice.

SUMMARY: The invention listed below is owned by an agency of the U.S. Government and is available for licensing to achieve expeditious commercialization of results of federally-funded research and development. Foreign patent applications are filed on selected inventions to extend market coverage for companies and may also be available for licensing.

FOR FURTHER INFORMATION CONTACT: Peter Tung, 240-669-5483; peter.tung@nih.gov. Licensing information and copies of the patent applications listed below may be obtained by communicating with the indicated licensing contact at the Technology Transfer and Intellectual Property Office, National Institute of Allergy and Infectious Diseases, 5601 Fishers Lane, Rockville, MD, 20852; tel. 301-496-2644. A signed Confidential Disclosure Agreement will be required to receive copies of unpublished patent applications.

SUPPLEMENTARY INFORMATION: Technology description follows.

Compositions and Methods for Blocking Transmission of Plasmodium

Description of Technology:

According to the World Health Organization, about 3.2 billion people – nearly half of the world's population – are at risk of infection by *Plasmodium* parasites, resulting in malaria. An estimated 214 million cases and 438,000 deaths were due to malaria in 2015.

P47 protein expressed by *Plasmodium* species allow malaria parasites to evade the mosquito immune system, thereby facilitating the transmission of malaria parasites. NIAID inventors have discovered the region of P47 protein responsible for the immune evasion function of this protein. Specific sequences of protein fragments of P47 have proven to be both highly antigenic and shown to be responsible in allowing malaria parasites to evade the mosquito immune system. Proof of concept in a mouse model has demonstrated that vaccination using specific P47 protein fragments blocks *Plasmodium* transmission by mosquitoes.

Immunization with the P47 protein variants of this technology provides a candidate for a potential, effective, transmission blocking malaria vaccine against *Plasmodium* species.

This technology is available for licensing for commercial development in accordance with 35 U.S.C. 209 and 37 CFR Part 404, as well as for further development and evaluation under a research collaboration.

Potential Commercial Applications:

- Transmission blocking malaria vaccine

Competitive Advantages:

- Transmission blocking of *Plasmodium*
- Transmission blocking activity based on recruiting the mosquito immune system to kill *Plasmodium* parasites by blocking *Plasmodium* immune evasion

Development Stage:

- Early-stage.
- In vitro data available.
- In vivo data available (animal).

Inventors: Carolina Veronica Barillas-Mury, Alvaro Molina-Cruz, Gaspar Exequiel Canepa, all of NIAID

Publications:

Intellectual Property: HHS Reference No. E-294-2016/0 - U.S. Provisional Application No. 62/463,011, filed February 24, 2017

Licensing Contact: Peter Tung, 240-669-5483; peter.tung@nih.gov.

Collaborative Research Opportunity: The National Institute of Allergy and Infectious Diseases is seeking statements of capability or interest from parties interested in collaborative research to further develop, evaluate or commercialize P47 protein fragments as a transmission blocking vaccine. For collaboration opportunities, please contact Peter Tung at 240-669-5483; peter.tung@nih.gov.

Dated: December 13, 2017.

Suzanne Frisbie,

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Technology Transfer and Intellectual Property Office,

National Institute of Allergy and Infectious Diseases.

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